DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-006660
Date Inspected: 08-May-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Clackamas, OR

CWI Name:	Mike Gregson, Rob Walters	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☐ Yes ☐ No ☑ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3
Hinge-K Pipe Beam Assembly 102A-1: 5/08/09
a111-1 Forging to a110-1 Base Plate
QA Inspector randomly witnessed welder #J6, Mr. Craig Jacobsen had completed the submerged arc welding repair on this a111-1 forging to a110-1 base plate, designated as weld joint # W2-13 and QC Inspector Rob Walters was in-process of 100% ultrasonic weld inspection on this repair, per AWS D1.5 tension acceptance criteria.

Hinge-K Pipe Beam Assembly 102A-2: 5/08/09
a111-2 Forging to a110-2 Base Plate
QA Inspector randomly witnessed welder #T23, Mr. John Tellone, perform grinding on a107 and b106 stiffener plates, designated as weld joints #W2-03, W2-04, W2-05W2-14, W2-15 and W2-16. QA Inspector noticed that these 25mm and 10mm fillet welds were previously visually marked up by OIW QC Inspector Rob Walters, in accordance to AWS D1.5 visual acceptance criteria.

Hinge-K Pipe Beam Assembly 102A-3: 5/08/09
a111-3 Forging to a110-3 Base Plate
QA Inspector noticed the welding on the CJP (AWS D1.5 TC-U9a-S) a111-3 pipe forging to a110-3 base plate, for pipe beam assembly 102A-3 was complete and sitting idle in the OIW South storage yard, pending 100% final ultrasonic weld inspection. QA Inspector noticed 100% preliminary ultrasonic weld inspection was completed by OIW QC Inspectors and no rejectable indications were found.

Hinge-K Pipe Beam Assembly 102A-4: 5/08/09
a111-4 Forging to a110-4 Base Plate
QA Inspector noticed the welding on the CJP (AWS D1.5 TC-U9a-S) a111-4 pipe forging to a110-4 base plate, for pipe beam assembly 102A-4 was complete and was sitting idle in the OIW South storage yard, pending 100% final ultrasonic weld inspection. QA Inspector noticed 100% preliminary ultrasonic weld inspection was completed by OIW QC Inspectors and no rejectable indications were found.

Hinge-K Pipe Beam Fuse Assembly 120A-1: 5/08/09
a124-6 Half Fuse to a124-7 Half Fuse
QA Inspector noticed this fuse assembly 120A-1 was sitting idle in OIW Bay 3, pending the stainless steel overlay process.

Hinge-K Pipe Beam Fuse Assembly 120A-2: 5/08/09
a124-3 Half Fuse to a124-11 Half Fuse
QA Inspector noticed this assembly 120A-2 was sitting idle, with a pending non-critical weld repair.

Hinge-K Pipe Beam Fuse Assembly 120A-3: 5/08/09
a124-12 Half Fuse to a124-10 Half Fuse
A & G Machining
QA Inspector spoke with A&G Machining on this date and A&G explained that the 2nd cut pass of .160” (4. 06mm) was complete and the third and final cut pass of .160” (4.06mm) was in progress and the rough machining should be completed by on 5/11/09, in the morning.

Hinge-K Pipe Beam Fuse Assembly 120A-4: 5/08/09
a124-13 Half Fuse to a124-4 Half Fuse
QA Inspector noticed the a124-13 half fuse to a124-4 half fuse, CJP weld splice, designated as weld joint #WM3-18, was complete and sitting idle, pending 100% preliminary ultrasonic weld inspection, by OIW QC personell.

Hinge-K Pipe Beam Sub-Assembly a124-2: 5/08/09
a125 & b125 Ring Stiffeners to a124-2 Half Fuse
QA Inspector noticed that the welding on the internal ring stiffeners was complete and this sub-assembly a124-2 was sitting idle, pending final non-destructive testing by OIW QC personell.

Hinge-K Pipe Beam Sub-Assembly a124-9: 5/08/09
a125 & b125 Ring Stiffeners to a124-9 Half Fuse

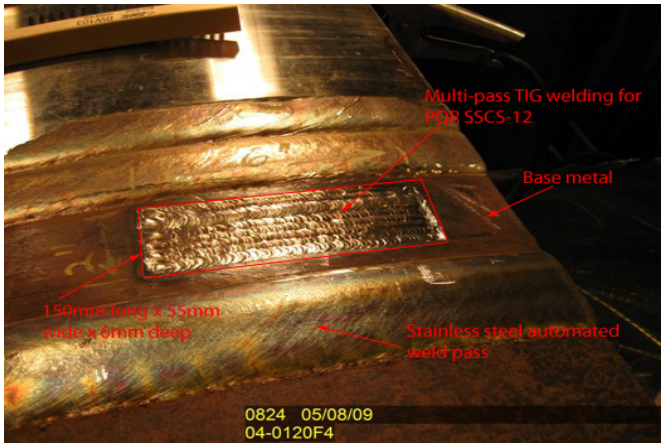
QA Inspector noticed this a fuse sub-assembly a124-09 had been previously transferred from the OIW South storage yard to OIW fabrication shop and was sitting idle, pending SAW of the internal ring stiffeners, a125 and b125.

Hinge-K Pipe Beam Sub-Assembly a124-14: 5/08/09
a125 & b125 Ring Stiffeners to a124-14 Half Fuse
QA Inspector randomly witnessed OIW welder #O6, Mr. Tim O'Brian, perform initial pre-heat on sub-assembly a124-14, in preparation for tack welding the first internal ring stiffener, designated as weld joint #WM3-11.
QA Inspector noticed that QC Inspector Rob Walters was present to verify pre-heat temperature, prior to submerged arc weld tacking and to verify Mr. Tim O'Brian was in compliance with the applicable welding procedure specification (WPS 4020).
QA Inspector verified Mr. Tim O'Brian was currently qualified for this welding process/position, prior to tacking and QC Inspector Mike Gregson explained that a OIW QC Inspector would be present to monitor in-process welding parameters (amps/volts) and continuous pre-heat temperatures.
Procedure Qualification Test (PQR): 5/08/09
PQR #SSCS-12
QA Inspector received an inspection request on 5/7/09 from OIW QC manager Tom Tomovick, explaining that OIW would be running a PQR, for the potential weld repairs on the stainless steel overlay. QA Inspector arrived at OIW bay 3 to witness the PQR and met with QC Inspector Scott Reed. Mr. Scott Reed explained that welder #K20, Mr. Randy Kleeman, would be performing tungsten inert gas (TIG) welding, using electrode designated as AWS A5.9 ER309L and AWS A5.9 ER316L, in the flat position. Mr. Scott Reed explained that he would be present during the welding and to verify and document in-process welding parameters (amps/volts), pre-heat temperatures, distance travelled, etc. QA Inspector noticed that the PQR test plate had a square cut in the carbon steel base metal approximately 150mm long x 55mm wide x 6mm deep and Mr. Randy Kleeman was welding with the ER309L on all passes and the final two layer passes would be welded with the ER316L electrode. QA Inspector witnessed Mr. Scott Reed was present at all times during the welding process and Mr. Scott Reed was recording data on the applicable data sheet for procedure qualification. QA Inspector noted that Mr. Randy Kleeman would not be finished welding by end of shift and QA Inspector Clete Henke would be present for the completion of this PQR SSCS-12. QA Inspector noted Mr. Randy Kleeman and Mr. Scott Reed appeared to be in compliance with AWS D1.5 and Mr. Scott Reed explained that a copy of the PQR data sheet would be provided to QA Inspector, after completion of the PQR. See pictures attached below.

Material, Equipment, and Labor Tracking
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 6 OIW production personnel and 2 QC Inspectors. The following personell were present at A & G Machine: 1 A&G supervisor and 1 A&G machinist using a horizontal lathe.

WELDING INSPECTION REPORT

(Continued Page 4 of 4)



Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer